

### Acknowledgment

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## Report on Monarch Butterfly (*Danaus plexippus* L.) Migration Experiment, 1965

This autumn I agreed to assist Professor F. A. Urquhart of Toronto University, Canada, in his long term study of the migrations and orientation of the Monarch or Milkweed Butterfly, *Danaus plexippus* L., by releasing in Britain live specimens tagged with special adhesive labels each bearing a serial number and Toronto University's address.

It was originally intended to release at least several hundred tagged butterflies in two places in England, but, unfortunately, due to a disastrous breeding season in North America and a virus outbreak in the University's laboratories, where many butterflies are reared annually for research purposes, it was only possible to allocate 50. All these had been reared in the laboratories and reached me by special airmail on 6th September 1965, after a four-day journey. Each butterfly was packed in a cellophane envelope with its wings folded flat above its back and had a pad of cotton wool soaked in a dilute solution of unpasteurized honey (to which a little glucose and glycogen had been added) placed by its tongue for nourishment. They arrived in extremely good condition; only one (No. 26/831) was moribund and after showing signs of recovery eventually died. The others soon became active on being removed from their envelopes; indeed, some actually forced their way out as soon as the envelopes were opened and flew off strongly.

As only 50 butterflies were received I decided to release them all in one place: Cadbury Camp, near Clevedon, North Somerset (Nat. Grid. Map Ref. ST/454725). They were actually released between 12 noon and 1 p.m. on 6th September 1965, in the presence of representatives of the Press and B.B.C. Television. The event was filmed for B.B.C. Television. The weather at the time was mainly dull, but with frequent bright periods and a light W.S.W. wind. On being released on clumps of Marjoram and other wild flowers, the majority fed freely from the flowers and flew about strongly.

I had to leave the locality soon after 1 p.m., but Mr. T. B. Silcocks and his wife, who assisted me in the release, stayed on until 5 p.m., by which

time only about 10 were still to be seen. At around 3 p.m. he watched, through binoculars, one butterfly fly off due east. It rose about 100 feet above the hill, then lost height and flew for about half-a-mile before it became lost to sight against a background of trees. The next day, a gloriously warm and sunny one, Mr. H. H. Davis visited Cadbury Camp at about 11 a.m. and failed to see a single specimen alive or dead despite a careful search.

The first sighting (considered by me to be correctly identified) of one of these butterflies came from Alvechurch, Worcestershire, not far from Birmingham. It was seen at 4.40 p.m. the same day as I released them. Assuming that it was one of the first to be released, it must have travelled the 80 miles from Cadbury Camp at around 17 m.p.h. Since, Monarchs are known to fly at speeds of up to 30 m.p.h. it is clear that 17 m.p.h. is not beyond the bounds of probability.

At the request of its representative, I allowed *The Daily Mail* to release one of the Monarchs (serial No. 26/850—those released at Cadbury Camp bore the serial nos. 26/800-849) at Richmond Park, Surrey, on the evening of 7th September. This one was eventually picked up dead at Richmond Bridge twelve days later—only some 500 yards from the point of release. It was returned to Toronto University by the finder.

Although only one of those released has actually been recovered, some 20 reports of sightings have been received. I have checked each of these with the observers concerned as far as possible before accepting any of them. The 11 reports listed below I consider to be genuine sightings of those released at Cadbury Camp. One butterfly was seen in each case.

<i>Date of sighting</i>	<i>Locality</i>	<i>Distance travelled</i>	<i>Direction taken</i>
6th Sept.	Alvechurch, Worcestershire	80 m.	N.N.E.
7th Sept.	Havant, Hampshire	86 m.	S.E.
7th Sept.	Newbridge, Oxfordshire	65 m.	N.E.
9th Sept.	Aldbourne, Wiltshire	50 m.	E.N.E.
13th Sept.	Edgehill, Warwickshire	72 m.	N.E.
19th Sept.	Barnstaple, Devon	64 m.	W.S.W.
20th Sept.	Poole, Dorset	62 m.	S.E.
21st Sept.	Bristol	8 m.	E.
22nd Sept.	Corsham, Wiltshire	22 m.	E.
22nd Sept.	Kettering, Northamptonshire	110 m.	N.E.
26th Sept.	Lacock, Wiltshire	28 m.	E.

It must be emphasized that as far as Dr. Urquhart is concerned none of these sight records can be relied upon for the purposes of his investigation; only actual recoveries of the released butterflies are accepted, rightly, by him. This year's experiment in Britain, which was a very small part of a much larger research programme, could only be regarded as a pilot scheme. Scientifically the results have only proved that it is possible to transport these butterflies alive across the Atlantic and no conclusions should be drawn from the sight records.

Nevertheless, these do, I think, suggest that similar experiments in future years on a much larger scale could yield useful and interesting results, and that released Monarch butterflies stand a good chance of recovery when the general public in the British Isles has been alerted by the excellent coverage it is possible to arrange with the willing co-operation of the British press, radio and television.

J. F. BURTON, B.B.C. Natural History Unit, Broadcasting House, Bristol, 8.